ArcelorMittal

Health & Safety – Product Safety

Safety Data Sheet
For the use of an Article
(Not required by the REACH – GHS Regulations)

1. IDENTIFICATION OF THE ARTICLE AND OF THE COMPANY/UNDERTAKING

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Brand name: **Steels with Magnelis® zinc-aluminium-magnesium coating**

Reach status: Article

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Uses: Steel for bending, drawing, clinching, profiling, stamping, welding etc..
Construction: profiles, structural material, cladding, cable trays, expanded metal, concrete moulds
Public works & civil engineering: decks for car parks, sound insulation wall panels, walls providing protection against hail
Agricultural & farming: barns, greenhouse structures
Road & railway applications: safety & protection equipment

Range:

Designation	Standard	Commercial Sheets
Steels	EN10346	E35 + E70
Magnelis® coating	SEW022	

2. HAZARDS IDENTIFICATION

Specific hazards: Related to protective oil, for articles delivered oiled.

Skin contact: In the event of direct contacts (without gloves) frequent or prolonged (oils):
- Local effects: Possible irritation phenomena.
- Sensitization: Possible allergy phenomena.

Eye contact:
Indirect (protective oil) Local effects: risk of irritation.

Inhalation: Respect of the occupational exposure limit values noted in this SDS. See heading 8.

Ingestion: Not applicable as it is.

Main hazard to the environment: None.

Prevention: Safety gloves and glasses must be worn during handling.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients (percent by weight):

		Surface Treatments	Other
Steel Substrate	**Metallic Coating**	**E-Passivation®**	
Main elements: Fe> 95%, Mn < 1.7%, Al < 2%. Other elements: Si < 0,6%, P < 0.1%, Nb < 0.09%, Ti < 0.3%.	93.5% zinc, 3.5% aluminium and 3% magnesium	Main Elements: Inorganic salts Others elements: PolyAcrylic or PolyEster resin	Oil

Dangerous impurities: None.

4. FIRST AID MEASURES

Specific hazards: Related to protective oil.

Skin contact: Wash well with soap and large amounts of water.

Eye contact:
Indirect (protective oil) Rinse with large amounts of water.
Take medical advice.

Inhalation: Not applicable as it is.

Ingestion: Not applicable as it is.

Specific first aid: Not applicable as it is.

5. FIRE FIGHTING MEASURES

Specific hazards: Non-flammable.

Extinguishing media: Use extinction means suitable with the stored products in the vicinity.

Specific protective measures: No specific measures.

Specific dangers: Not specifically concerned.

6. ACCIDENTAL RELEASE MEASURES

Individual precautions: Not applicable as it is.

Environment precautions: Article generates no particular environmental hazards.

Clean-up and recovery procedures: Not specifically concerned.

7. HANDLING AND STORAGE

Precautions to be taken during handling: Delivered packaged. Normal precautions should be taken to avoid injuries possibly by sharp edges or by release of tension when breaking the straps.

Packaging materials: Steel sheet and/or paper + tightened strip.

Precautions to be taken during storage and packaging: Related to packaging: safety gloves (cuts), glasses and shoes must be worn.
Risk of oil retention in bottom of packaging.
When storing sheets, the risk of accidentally slipping should be kept in mind.

Incompatible materials: Article has not to be stored where acids are present.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Whole-body protection: Wear worker clothes.

Protection of hands: Gloves anti-cuts.

Protection of eyes and/or face: Safety glasses when opening packaging.

Respiratory protection: Not applicable to article as it is.

Emergency facilities: Not applicable to article as it is.

Other information: Safety shoes must be worn.

Abbreviations:

TLV: Threshold Limit Value
VEMP: Valeur d'Exposition Moyenne Pondérée
VECD/P: Valeur plafond
EV: Exposure Value
EL: Exposure Limit
P: Permissible
R: Recommended
W: Workplace
TWA: Time-Weighted Average
ST: Short-Term
C: Ceiling
NIC: Note of Intended Changes
L: Exposure by all routes should be carefully controlled to levels as low as possible
IDLH: **I**mmediately **D**angerous to **L**ife or **H**ealth concentrations
Ca: The notation “Ca” appears in the IDLH field for all substances that NIOSH considers potential occupational carcinogens
NIOSH: The **N**ational **I**nstitute for **O**ccupational **S**afety and **H**ealth
OSHA: **O**ccupational **S**afety and **H**ealth **A**dministration
CMR: **C**arcinogenic, **M**utagenic and toxic for the **R**eproduction
(A): alveolar fraction; (I): inhalable fraction; (R): respirable fraction

During welding, grinding, recycling by remelting:

Specific information on substances

Substance and its inorganic compounds	Melting point ℃	Boiling Point ℃	Risks
Manganese	1244	1962	Risk of metal fume fever among persons exposed. Risk of manganism among persons exposed.
Aluminium	660	2518	Risk of aluminium exposure à during welding.
Silicon	1413	2899	-
Phosphorus	44	276	-
Niobium	2476	4743	
Titanium	1667	3286	-
Zinc	419	907 at 1 bar	Risk of metal fume fever among persons exposed.
Magnesium	651	1100	Risk of metal fume fever among persons exposed.
For oil, E-passivation ®	Not applicable	Not applicable	During welding, there is emission of fumes and gases containing, in particular, carbon dioxide and carbon monoxide as well as Organic Compounds, including CMR substances at trace level, like for all organic coated materials welded and some methacrylate or acrylate compounds in the case of use of E-passivation containing an acrylic part.

Exposure limit values in mg/m^3 [1]

Substance	United Kingdom – EL		United States – ACGIH – TLV	
	W –TWA	W – ST	TWA	ST or C
Dust	10(I) – 4(R)	-	-	10(I) – 3(R)
Fe_2O_3	5 (fume) as Fe	10 (fume) as Fe	5(R)	-
Manganese as Mn	0.5	-	0.2	-
Aluminium as Al	10(I) – 4(R)	-	1(R)	-
Silicon	10(I) – 4(R)	--	10 (withdrawn in 2006)	-
Amorphous silica (SiO_2)	6(I) – 2.4(R)	-	2(R) (withdrawn in 2006)	-
Phosphorus as P_2O_5	1	2	-	-
Niobium	-	-	-	-
Titanium	-	-	-	-
Titanium dioxide	10(I) – 4(R)	-	10	-
Zinc oxide	-	-	2(R)	10 (R)
Magnesium	-	-	-	-
Magnesium oxide	10(I) – 4(R)		10 (I)	-
For oil, E-passivation®				
Carbon Monoxide	35	232	25 ppm	-
Carbon Dioxide	9150	27400	5000 ppm	30000 ppm
Benzene	3.25	-	0.5 ppm	2.5 ppm
1, 3-butadiene	22	-	2 ppm	-
Formaldehyde	2.5	2.5	-	0.3C ppm
Benzo(a)pyren	-	-	L*	-
Hydrogen cyanide[2]	-	11	-	4.7C ppm (as CN)

[1] *TLVs and BEIs – USA ACGIH, 2011. OSHA Table Z-1 Limits for Air Contaminants (June 30, 1993) (29 CFR 1910.1000) (1971 Permissible Exposure Limits (PELs)) and OSHA Specifically Regulated Substances (29 CFR 1910.1001-.1052). Quebec: Règlement sur la santé et la sécurité du travail Incluant la Gazette officielle du 30 Janvier 2009). Ireland: 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001), Occupational Health and Safety Act, Canada. Ontario OELs (Reg. 833, Control of Exposure to Biological or Chemical Agents, as amended to Reg. 491/09; Reg. 490, Designated Substances, effective July 1, 2010). Alberta: Occupational Health and Safety Code 2009. EH40/2005 Workplace exposure limits – United Kingdom, October 2007.*

[2] *in case of Polyester resin*

Substance	United Kingdom – EL		United States – ACGIH – TLV	
	W –TWA	W – ST	TWA	ST or C
Cyanides as CN^2	5	-	-	5C
Hydrogen Fluoride as F^3	1.5	2.5	0.5 ppm	2C ppm
Fluorides as F^3	2.5	-	2.5	-

Substance	United States –EL (OSHA)	
	P – TWA	P – C
Dust	15 – 5(R)	-
Fe_2O_3	10 (fume)	-
Manganese as Mn	-	5 (fume and compounds)
Aluminium as Al	15 – 5(R)	-
Silicon	15 – 5(R)	-
Amorphous silica (SiO_2)	-	-
Phosphorus as P_2O_5	-	-
Niobium	-	-
Titanium	-	-
Titanium dioxide	15	-
Zinc oxide fume	5	-
Magnesium	-	-
Magnesium oxide	15 (fume, total particulate)	-
For oil, E-passivation®		
Carbon Monoxide	55	-
Carbon Dioxide	9000	-
Benzene (see 1910.1028)	Action level: 0.5 ppm 1 ppm	5 ppm
1, 3-butadiene (see 1910.1051)	Action level: 0.5 ppm 1 ppm	5 ppm
Formaldehyde (see 1910.1048)	Action level: 0.5 ppm 0.75 ppm	2 ppm
Benzo(a)pyren	-	-
Hydrogen cyanide[2]	11	-
Cyanides as CN^2	5	-
Hydrogen Fluoride[3]	-	-
Fluorides[3]	2.5	-

Substance	Canada – Quebec		Ireland – EL	
	VMEP	VECD/P	TWA	ST
Dust	10	-	4 (R) – 10 (I)	-
Fe_2O_3 as Iron	5 (fume and dust)	-	5 (fume)	10 (fume)
Manganese as Mn	1 (fume); 5 (dust and compounds)	3 (fume)	1 (fume); 0.2 (compounds)	3 (fume)
Aluminium as Al	5 (welding fumes)	-	5 (welding fumes)	-
Silicon	10	-	10 (I) – 4(R)	-
Amorphous silica (SiO_2)	2 (fumes)	-	6 (I) – 2.4(R)	-
Phosphorus as P_2O_5	-	-	1	2

[3] *in case of E-passivation containing fluorides*

Substance	Canada – Quebec		Ireland – EL	
	VMEP	VECD/P	TWA	ST
Niobium	-	-	-	-
Titanium	-	-	-	-
Titanium dioxide	10	-	10(I) – 4(R)	-
Zinc oxide fume	5	10	5	10
Magnesium	-	-	-	-
Magnesium oxide	10 (fume) as Mg	-	5 (fume) 10(I) – 4(R) (dust)	10 (fume) 10(I) – 4(R) (dust)
For oil, E-passivation®				
Carbon Monoxide	40	230	23	115
Carbon Dioxide	9000	54000	9000	27000
Benzene	3	15.5	3	-
1, 3-butadiene	4.4	-	2.2	-
Formaldehyde	-	3P	2.5	2.5
Benzo(a)pyren	0.005	-	-	-
Hydrogen cyanide[2]	-	11 as CN	-	10
Cyanides as CN[2]	-	11	5	-
Hydrogen Fluoride as F[3]	-	2.6P	1.5	2.5
Fluorides as F[3]	2.5	-	2.5	-

Substance	Canada – Alberta – EL			Canada – Ontario – EV		
	TWA	ST	C	TWA	ST	C
Dust	-	-	-	10 (I) – 3(R)	-	-
Fe_2O_3	5 (R)	-	-	5 (R)	-	-
Manganese as Mn	0.2	-	-	0.2	-	-
Aluminium as Al	10 (metal and oxide dust)	-	-	10 (metal and oxide dust); 5 (welding fumes)	-	-
Silicon	-	-	-	-	-	-
Amorphous silica (SiO_2)	-	-	-	2(R) (fume)	-	-
Phosphorus as P_2O_5	-	-	-	-	-	-
Niobium	-	-	-	-	-	-
Titanium	-	-	-	-	-	-
Titanium dioxide	10	-	-	10	-	-
Zinc oxide	2 (R)	10 (R)	-	2 (R)	10 (R)	-
Magnesium	-	-	-	-	-	-
Magnesium oxide	10 (fume)	-	-	10 (I)	-	-
For oil, E-passivation®						
Carbon Monoxide	29	-	-	25 ppm	100 ppm	-
Carbon Dioxide	9000	-	-	5000 ppm	9000 ppm	-
Benzene	1.6	8	-	0.5 ppm	2.5 ppm	-
1, 3-butadiene	4.4	-	-	2 ppm	-	-

Substance	Canada – Alberta – EL			Canada – Ontario – EV		
	TWA	ST	C	TWA	ST	C
Formaldehyde	0.9	-	1.3	-	1 ppm	1.5 ppm
Benzo(a)pyren	-	-	-	-[4]	-	-
Hydrogen cyanide[2]	-	-	5.2			4.7 ppm
Cyanides as CN[2]	-	-	5	-	-	5
Hydrogen Fluoride as F[3]	0.4	-	1.6	0.5 ppm	-	2 ppm
Fluorides[3]	2.5 (as F)	-	-	2.5	-	-

Exposure path: Air.

Associated symptoms: None.

Prevention: During any processing of the article (welding, grinding, cutting, recycling by remelting, etc.) in which dust, fumes or gas can be generated, ensure that the limits listed above are not exceeded at the workplace.
Extraction is therefore recommended at the workplace. Otherwise, personal protective equipments (PPE) should be necessarily worn[**].
The risk of explosion or ignition at the time of the aspiration and confined accumulation of metallic dust shall be taken into account.

Hygiene: Not applicable to article as it is.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.

Colour: Metallic appearance.

pH: Not applicable.

Characteristic temperatures: Not applicable.

Flash point: Not applicable.

Oxidizing properties: Not applicable.

Specific density: About 7800 Kg/m^3.

Solubility: Not applicable, article not soluble in water.

Radioactivity: None in all cases.

10. STABILITY AND REACTIVITY

Stability: Stable.

Hazardous reactions: No known hazardous reactions with usual substances.

Hazardous decomposition products: None.

Materials to be avoided: None.

Conditions to be avoided: None.

[4] Exposure by all routes should be carefully controlled to levels as low as possible.
[**] It will be noted that collective protection should be firstly used prior to PPEs.

11. TOXICOLOGICAL INFORMATION

Specific hazards: Related to protective oil, for articles delivered oiled. See specific SDS of used protective oil.

Skin contact: In the event of direct contacts (without gloves) frequent or prolonged (oils):
- Local effects: Possible irritation phenomena.
- Sensitization: Possible allergy phenomena.

Safety gloves should be worn during handling.

Eye contact:
Indirect (protective oil) Local effects: risk of irritation.
Safety glasses should be worn.

Inhalation: Respect of the occupational exposure limit values noted in this SDS. See heading 8.

Ingestion: Not applicable as it is.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Article insoluble in water. Material recycled from scraps.

13. DISPOSAL CONSIDERATIONS

Treatment procedure prior to disposal/ destruction: Article recyclable and recycled from scraps in compliance with Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end of life vehicles and Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Used packaging cleaning, treatment, destruction procedures: Destruction of packaging in accordance with applicable legislation

14. TRANSPORT INFORMATION

Article not dangerous with regard to transport rules.

15. REGULATORY INFORMATION

E.U. compulsory labeling: No labeling required.

Specific protection of workers: Not applicable.

16. OTHER INFORMATION

No other information.

Comments to the Users:

Due to the fact that the product concerned in this document has a status of article in the meaning of the Reach regulation, this document doesn't constitute a Safety Data Sheet in the meaning of the article 31 of the REACH regulation n° 1907-2006. In consequence, its supply is purely facultative. It enables to communicate the risks related to the processing of the article.

This sheet supplements but does not replace instruction manuals. The information contained herein is given to the best of our knowledge concerning the article indicated on the date on which it was updated. Information is provided in good faith.

Attention of users is also drawn to possible risks which may arise if the article is applied for purposes other than those for which it has been designed.

This sheet does not in any way exempt the user from knowing and complying with all the regulatory texts applying to his or her activity. The user takes full responsibility for knowing and taking the precautions related to the use of the article. References to regulatory provisions are given to assist the user in fulfilling the obligations incumbent on persons using a dangerous preparation.

All local and international measures and provisions which could apply should be referred to.

Attention of users is drawn to the possible existence of other provisions supplementing these rules.

This list is not to be taken as comprehensive. It does not exempt the user from ensuring that obligations under texts other than those to which reference is made do not apply to the detention and use of the article, for which the user alone is responsible.